

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
690 Walnut Ave. St. 150  
Vallejo, CA 94592-1133  
(707) 649-5453  
(707) 649-5493

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-001077**Date Inspected:** 11-Dec-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 830**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Sha Zhi, Zhu Zhonghai**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** 89/144 M mockup and OBG floor beam**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector Sherri Brannon arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China to periodically monitor welding and Quality Control (QC) functions. While on site the QA Inspector observed and/or discovered the following.

**Bay 2****89 Meter Mockup MUSB-MA25:**

QA Inspector Brannon randomly observed ZPMC qualified welder Mr. Li Shuqiang ID #053609 groove welding fill passes joining, piece # MA25 to p5.6 weld joint #17A. Mr. Li was observed welding in the 2G (horizontal) position utilizing flux cored arc welding (FCAW) process with a 1.4mm diameter electrode, filler metal brand Supercored 71H, class E71T-1 semi automatic. QA Inspector Brannon observed the ZPMC QC CWI Inspector Sha Zhi verifying that the welding parameters and pre-heat were in accordance with the Welding Procedure Specification (WPS). QA Inspector observed preheat and welding parameters measured by the QC CWI Inspector Sha Zhi to be: preheat temperature of 160°C and welding parameters amps of 310, volts of 31.0, a travel speed of 258 mm/min and a shielding gas flow of 24L/min. Welding parameters observed by QA Inspector Brannon appear to be in general compliance with the approved WPS-B-T-2332-TC-U5-F.

**89 Meter Mockup MUSB-MA25:**

QA Inspector Brannon randomly observed ZPMC qualified welder Mr. Han Xiaofeng ID #054467 groove welding fill passes joining, piece # p215 to p209 weld joint #19A. Mr. Li was observed welding in the 2G (horizontal) position utilizing shield metal arc welding (SMAW) process with a 4.0mm diameter electrode, filler metal brand E9018M-H4R, class Excalibur9018M MR, manual. QA Inspector Brannon observed the ZPMC QC CWI

---

## WELDING INSPECTION REPORT

( Continued Page 2 of 3 )

---

Inspector Sha Zhi verifying that the welding parameters and pre-heat were in accordance with the Welding Procedure Specification (WPS). QA Inspector observed preheat and welding parameters measured by the QC CWI Inspector Sha Zhi to be: preheat temperature of 160°C and welding parameters amps of 172. Welding parameters observed by QA Inspector Brannon appear to be in general compliance with the approved WPS-B-T-3212-TC-U2.

89 Meter Mockup MUSB-MA21-F/J:

QA Inspector Brannon randomly observed ZPMC qualified welder Mr. Dai Lu ID #048659 groove welding fill passes joining, piece # SA42-2 to p912-2 weld joint #4B. Mr. Dai was observed welding in the 1G (flat) position utilizing shield metal arc welding (SMAW) process with a 4.8mm diameter electrode, filler metal brand E9018M-H4R, class Excalibur9018M MR, manual. QA Inspector Brannon observed the ZPMC QC CWI Inspector Zhu Zhonghai verifying that the welding parameters and pre-heat were in accordance with the Welding Procedure Specification (WPS). QA Inspector observed preheat and welding parameters measured by the QC CWI Inspector Zhu Zhonghai to be: preheat temperature of 160°C and welding parameters amps of 282. Welding parameters observed by QA Inspector Brannon appear to be in general compliance with the approved WPS-B-T-3211-TC-U5b.

89 Meter Mockup MUSB-MA21-F/J:

QA Inspector Brannon randomly observed ZPMC qualified welder Mr. Wang Zhonghus ID #053753 groove welding fill passes joining, piece # SA42-1 to p912-1 weld joint #4B. Mr. Wang was observed welding in the 1G (flat) position utilizing shield metal arc welding (SMAW) process with a 4.8mm diameter electrode, filler metal brand E9018M-H4R, class Excalibur9018M MR, manual. QA Inspector Brannon observed the ZPMC QC CWI Inspector Zhu Zhonghai verifying that the welding parameters and pre-heat were in accordance with the Welding Procedure Specification (WPS). QA Inspector observed preheat and welding parameters measured by the QC CWI Inspector Zhu Zhonghai to be: preheat temperature of 160°C and welding parameters amps of 276 volts. Welding parameters observed by QA Inspector Brannon appear to be in general compliance with the approved WPS-B-T-3211-TC-U5b.

89 Meter Mock-up NDT MA-38:

QA Inspector Brannon randomly observed ZPMC NDT technician Mr. Zhou Dongyan perform magnetic particle testing (MT) on weld joints 1, 2, 3, 4, 11, 12, 13 and 14 for skin plate E - MA38.

Plate Material Storage Yard

QA Inspector Brannon went to the plate material storage yard accompanied by ZPMC Quality Control Mr. Sun Bo to observe marking and cutting of 2 samples for Charpy V-Notch testing fifth batch for re-test. QA Inspector verified heat numbers, size, length and width against the material test reports. The samples were identified as the following:

- (1) Heat number 7100435N, 60x2700x9000, Gr. A709M-HPS-485WT2-Z25
- (2) Heat number 7100441N, 75x3000x11000, Gr. A709M-HPS-485WT2-Z25

The following digital photograph below illustrates observation of the activities being performed.

---

## WELDING INSPECTION REPORT

( Continued Page 3 of 3 )

---



### Summary of Conversations:

No relevant conversations to report.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

---

**Inspected By:** Brannon, Sherri

Quality Assurance Inspector

---

**Reviewed By:** Carreon, Albert

QA Reviewer